

## CLAIMS

1. An optical characteristic measuring instrument that measures an optical characteristic of a device under test, comprising:

a polarization separating means that receives light having emitted from the device under test, separates the received light into p-polarized light and s-polarized light, and outputs the p-polarized light and s-polarized light;

a light generating means that generates incident light;

an optical modulation means that applies intensity modulation to the incident light, and emits modulated light;

a light input means that makes the incident light which has undergone the intensity modulation incident on the device under test wherein the incident light is coincident with a p-polarization axis and an s-polarization axis of said polarization separating means;

a first measuring means that measures a phase shift equivalent value and an amplitude equivalent value of the incident light based upon the output from said polarization separating means;

a second measuring means that measures a phase shift equivalent value of the incident light based upon the light emitted from the device under test; and

an optical characteristic measuring means that measures the optical characteristic of the device under test based upon the measured results by said first measuring means and said second measuring means.

2. The optical characteristic measuring instrument according to claim 1, wherein said optical characteristic measuring means measures the optical characteristic of the device under test based upon the measured result by said second measuring means if a p-polarization component of the amplitude

equivalent value of the incident light measured by said first measuring means being excessively large or excessively small compared with that of an s-polarization component thereof.

3. The optical characteristic measuring instrument according to claim 1 or 2, wherein the phase shift equivalent value is obtained by differentiating a phase shift by an optical angular frequency.

4. The optical characteristic measuring instrument according to claim 1 or 2, wherein the amplitude equivalent value is the square of an amplitude.

5. The optical characteristic measuring instrument according to claim 3, wherein a group delay time measuring means that measures a group delay time of the device under test based upon the measured result by said second measuring means.

6. An optical characteristic measuring method for measuring an optical characteristic of a device under test, comprising:

- a polarization separating step of receiving light having emitted from the device under test, separating the received light into p-polarized light and s-polarized light, and outputting the p-polarized light and s-polarized light;

- a light generating step of generating incident light;

- an optical modulation step of applying intensity modulation to the incident light, and emitting modulated light;

- a light input step of making the incident light which has undergone the intensity modulation incident on the device under test wherein the incident light is coincident with a p-polarization axis and an s-polarization axis of said polarization separating step;

a first measuring step of measuring a phase shift equivalent value and an amplitude equivalent value of the incident light based upon the output of said polarization separating step;

a second measuring step of measuring a phase shift equivalent value of the incident light based upon the light emitted from the device under test; and

an optical characteristic measuring step of measuring the optical characteristic of the device under test based upon the measured results by said first measuring step and said second measuring step.

7. A program of instructions for execution by the computer to perform an optical characteristic measuring process of an optical characteristic measuring instrument that measures an optical characteristic of a device under test, having: a polarization separating means that receives light having emitted from the device under test, separates the received light into p-polarized light and s-polarized light, and outputs the p-polarized light and s-polarized light; a light generating means that generates incident light; an optical modulation means that applies intensity modulation to the incident light, and emits modulated light; and a light input means that makes the incident light which has undergone the intensity modulation incident on the device under test wherein the incident light is coincident with a p-polarization axis and an s-polarization axis of said polarization separating means;

said optical characteristic measuring process comprising:

a first measuring step of measuring a phase shift equivalent value and an amplitude equivalent value of the incident light based upon the output of said polarization separating step;

a second measuring step of measuring a phase shift equivalent value

of the incident light based upon the light emitted from the device under test;  
and

an optical characteristic measuring step of measuring the optical characteristic of the device under test based upon the measured results by said first measuring step and said second measuring step.

8. A computer-readable medium having a program of instructions for execution by the computer to perform an optical characteristic measuring process of an optical characteristic measuring instrument that measures an optical characteristic of a device under test, having: a polarization separating means that receives light having emitted from the device under test, separates the received light into p-polarized light and s-polarized light, and outputs the p-polarized light and s-polarized light; a light generating means that generates incident light; an optical modulation means that applies intensity modulation to the incident light, and emits modulated light; and a light input means that makes the incident light which has undergone the intensity modulation incident on the device under test wherein the incident light is coincident with a p-polarization axis and an s-polarization axis of said polarization separating means;

said optical characteristic measuring process comprising:

a first measuring step of measuring a phase shift equivalent value and an amplitude equivalent value of the incident light based upon the output of said polarization separating step;

a second measuring step of measuring a phase shift equivalent value of the incident light based upon the light emitted from the device under test;  
and

an optical characteristic measuring step of measuring the optical characteristic of the device under test based upon the measured results by

said first measuring step and said second measuring step.